Report Number : ICRR12360

IEG ICR Review
Independent Evaluation Group

1. Project Data:		Date Posted :	03/29/2006	
PROJ ID :	P004960		Appraisal	Actual
Project Name :	Industrial Pollution Control	Project Costs (US$M)	118.1	36.4*
Country :	Algeria	Loan/Credit (US$M)	78.0	23.4**
Sector(s):	Board: ENV - Petrochemicals and fertilizers (45%), Other industry (42%), Central government administration (13%)	Cofinancing (US$M)	30.1	13.0*
L/C Number :	L4034			
		Board Approval (FY)		96
Partners involved :		Closing Date	06/30/2005	06/30/2005
Evaluator :	Panel Reviewer :	Division Manager :	Division :	
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2. Project Objectives and Components

a. Objectives

To assist the Borrower [Algeria] in reducing hazardous pollution by : (i) strengthening the Borrower's institutional capabilities in the area of environmental protection and management; (ii) strengthening the legal framework governing the protection and management of the environment; and (iii) initiating an investment program aimed at mitigating the adverse impact of industrial pollution on health and the environment . Note: this wording is from the Loan Agreement; the SAR and ICR use different but equivalent wordings . The Objective was not amended in the course of project implementation.

b. Components (or Key Conditions in the case of Adjustment Loans):

A. Strengthening of the Institutional and Legal Framework (Appraisal cost: $12.26 m.; Actual $8.94 m., including an unknown expenditure on the added hazardous waste component)

1. Strengthening of national and local administrations in the environmental area .
2. Strengthening the legal framework through a study on environmental liability and development and implementation of regulations to: (a) govern environmental impact assessments; (b) govern the reduction, re-use, handling , transportation and disposal of hazardous wastes; and (c) establish an integrated pollution control system, including granting of permits.
3. Design of the permit system referred to in A.2 (c) and its pilot implementation in Annaba District.
4. Strengthening the environmental finance system through studies aimed at : (a) expanding the mandate of the National Environmental Fund (NEF) to include the authority to finance investments; (b) identifying suitable economic instruments; and (c) identifying and adopting clean technologies .

B. ASMIDAL (public sector fertilizer manufacturer) (Appraisal cost: $59.08 m.; Actual: $11.24* m.)

1. Dismantling and decontamination of the sulfuric and phosphoric acid plants .
2. Provision of phosphoric acid and/or mono-ammonium phosphate.
3. Rehabilitation of the gas treatment system in the nitric acid plant and the granulation units .
4. Installation of a scrubber or a granulator in the ammonium nitrate plant .
5. Rehabilitation of the harbor reception facility in the port of Annaba .
6. Spare parts and materials.
7. Support to plant operation and management and workers' health and safety .

C. ENSIDER (public sector iron and steel works) (Appraisal cost: $46.76 m.; Actual: $3.32* m.)

1. Dust removal systems for the electric and blast furnaces and sintering plants, and installation of a door

cleaning system in the coke ovens and a boiler for ammonium distillation .

2. Provision of equipment for the construction of two wastewater treatment plants and renovation of an existing plant.
3. Laboratory equipment to monitor pollution.
4. Spare parts and materials.
5. Support to plant operation and management and workers' health and safety .

The project description was amended on February 19, 1999, as follows:
B.1 replace "decontamination" by "cessation of operation"
B.2 deleted.
B.4 delete "a scrubber or a".
C.1 revised to read "Installation of dust removal systems for the coke ovens and blast furnaces, and installation of equipment for ammonium distillation and desulfurization". [Note: this appears to have been a significant reduction in project scope.]
C.2 revised to read "Provision of equipment for the construction of wastewater treatment plants ".

The project description was further amended in May 2002, following the October 2001 Mid-Term Review. While the text of this change was not available for review, the ICR reports that it cancelled remaining funds for ASMIDAL and ENSIDER, on the understanding that the companies would complete their investments with their own resources, and reallocated $10.5 million for a new component, A.2 Hazardous Waste Management, to establish a pilot hazardous waste treatment facility. The ICR is not clear whether this is the same facility as that described in the SAR under V. The Government's Parallel Program in Skikda, which includes production changes at a chlorine plant to avoid the use of mercury, decontamination of the plant and construction of an engineered landfill for the disposal of mercury-comtaminated sludge, and was at that time intended to be carried out with government and other funds . However, a communication from the region has clarified that the new component did constitute the engineered landfill referred to in the SAR but that the site was changed from Skikda to another site, causing considerable delays .

c. Comments on Project Cost, Financing, Borrower Contribution, and Dates

* it is not clear from the ICR whether these figures include relevant expenditures by the enterprises ASMIDAL and ENSIDER after the May 2002 amendment.The region has clarified that only *some* expenditures are included.
** From the ICR text, Section 5.4. Annex 2 gives a total disbursement of $22.34 m but the sub-totals add to $23.50 m.(a rounding error, according to the region)
The original project cost estimates and financing plan appear to have been realistic, though the project scope was perhaps more ambitious than could have been implemented. The documents reviewed do not mention whether efforts were made to attract grant cofinancing, which might have made borrowing for environmental protection more palatable. The decision to use an extended implementation period of eight years was justified by events . Even though the loan closed on time, the hazardous waste component added in 2002, had not proceeded beyond the bidding stage by loan closure.

3. Relevance of Objectives & Design :

The project was consistent with the Bank's 1996 CAS and with Algeria's environmental management priorities. The combination of legal and institutional strengthening with action to mitigate two major pollution sources was both appropriate and even necessary to ensure government commitment to borrowing for technical assistance activities . The selection of ASMIDAL and ENSIDER also appears to have been appropriate, given the highly adverse impacts their emissions were having on surrounding populations, as was the use of environmental audits to determine which of the pollution problems should be tackled first, although the subsequent reduction in project scope may indicate that the enterprises were less committed to the project objectives than first appeared . Though not emphasized in the SAR, the selection of investments which had worthwhile financial returns (through energy savings or resource recovery) must have eased enterprise cooperation. While the SAR identified the main risks to timely and successful project implementation, with hindsight it can be seen that the actions taken were insufficient to prevent major delays and uncertainties during the early implementation period. A smaller project might have reduced the political and institutional risks.

4. Achievement of Objectives (Efficacy) :

Despite some reductions in project scope, the project achieved all three of its development objectives, though not to the full extent envisaged at appraisal. In particular, the ICR has no useful data on the achievement of the target of reducing ENSIDER dust emissions from 40,000 ton/yr to 11,000 ton/yr. However, the measured health impacts were impressive, especially in the villages closest to the plants . As the hazardous waste facility had not been built at the time of loan closure, its outcome remains uncertain, though there is evidence that Algeria is strongly committed to its completion and the Bank is continuing to supply non-lending services.

Although Section 4.2 of the ICR does not clearly compare project outcomes with SAR projections, it appears that all the legislative/ institutional targets were achieved fully or in part and, in some cases, exceeded . Given the embryonic state of environmental management in Algeria when the project was prepared, it appears to have played a key role in building national capacity, not least of which in the establishment of a credible compliance system for environmental laws.

5. Efficiency :

While recognizing the expected benefits of legal and institutional strengthening, the SAR understandably focused its quantitative analysis on the investment components and estimated economic rates of return of 29% for ASMIDAL and 49% for ENSIDER based essentially on health benefits and some productivity benefits . The ICR uses a broader definition of benefits, including additional productivity gains and benefits to fisheries, which seem unquestionable . More doubtful is the inclusion of increases in real estate values . The ICR does not demonstrate that such increases were a result of the project and, even if they were, they may represent double counting . More generally, the ICR does not present its results in a form directly comparable with the SAR, uses an opportunity cost of capital of 10% rather than the 12% used at appraisal, misleadingly states that a financial rate of return was not calculated in the SAR and was therefore not included in the ICR (the region has clarified that the actual reason was the non-availability of financial data from the enterprises), and presents no estimates at all for the added hazardous waste component, though apparently a financial analysis was undertaken . Moreover, Annex 3 consists only of tables, without any explanatory notes on assumptions or methodology and therefore cannot be independently checked.

The following table tries to compare the *a priori* and *a postieri* estimates of project efficiency:

Sub-Project	Economic Net Present Value (US$ m.)		Economic Rate of Return (%)		Financial Rate of Return (%)	
	Appraisal	ICR	Appraisal	ICR	Appraisal	ICR
ASMIDAL	37	NA	29	NA	19	NA
ENSIDER	73	NA	49	NA	-8	NA
Hazardous Waste	NA	NA	NA	NA	NA	NA**
Total Project	110 +	246 + 31*	NA	NA	NA	NA

* Direct benefits plus avoided costs (not further defined in the ICR) but needs further review to see if it includes double counting. Excludes hazardous waste.

** A communication from the region states that "A pre-feasibility study was carried out that established the financial viability of the project from a private sector operator point of view" and that later "ways to provide incentives were assessed".

Despite the ICR methodological and presentational deficiencies noted above, the evidence is clear that the ASMIDAL and ENSIDER components were economically justified and anecdotal evidence (including the fact that the enterprises were willing to complete the investments with their own funds) suggests that they were also viable in financial terms - in other words, "win-win" solutions.

6. M&E Design, Implementation, & Utilization:

The SAR (Annex 5) gave a reasonable set of performance indicators and required that progress towards their achievement be reported quarterly. However, apart from including a pilot monitoring system in Annaba under component A.3, the SAR does not describe how M&E would be carried out. The ICR briefly mentions that an air quality monitoring network was set up for Annaba and various laboratories established but there is no mention of water monitoring, though the region has clarified that water monitoring has intensified .. The ICR presentation on key performance indicators is roughly comparable to the SAR format, but no results are presented for the following : dust emissions from ENSIDER (a key pollutant); nitrogen oxides; and water pollution from oil and total suspended solids . The reported SO2 emissions are 8,000 ton/yr, exactly the appraisal estimate, apparently an error. However, some useful health indicators are added in the ICR.

7. Other (Safeguards, Fiduciary, Unintended Impacts--Positive & Negative):

Safeguards

The SAR has just two sentences on environmental impacts, though a much better section on social impacts (especially employment). EA Category B was appropriate for the project as appraised, but should have been changed to A when the hazardous waste component was added; it is not clear from the ICR whether this happened . The region has clarified that the management memo requesting approval for the project restructuring explicitly mentions that the project would be changed to A but this apparently was not reflected in the SAP . The region has stated that the EA work done was of A category standards, including appropriate public consultation .

The use of environmental audits for the two enterprises to characterize the pollution issues, set priorities and form the basis for the design of Component B was very appropriate and pioneering for Algeria . Also pioneering was the use of environmental management performance agreements for the two enterprises and later for 25 additional firms. There is no specific reference to measures to minimize negative environmental impacts of the project investments (that is, an Environmental Management Plan), though one outcome of the ENSIDER component was said to be "targeted environmental management measures". This would surely have been an issue for the hazardous waste component but no appraisal document (or even detailed description) for that investment was available for review, though it apprently exists in project files. The SAR makes no reference to other safeguard policies and it is unlikely that they should have been triggered for this project.

Despite the recommendations of the ICR guidelines, the ICR makes no reference at all to safeguard policies, the extent to which they were applied, implementation experience and any unexpected negative outcomes .

<u>Fiduciary Issues</u>
At appraisal, the project had relatively standard requirements for accounts and audits, reporting, and procurement (which were revised through an amendment to the legal agreements on February 19, 1999), and depended on a new PIU in an agency with almost no experience with international assistance . The reported difficulties and delays in procurement are therefore not surprising. The ICR does not report any misprocurement or other fiscal irregularities . The covenant on debt-service coverage for ASMIDAL and ENSIDER was deleted when they agreed to complete the project investments with their own funds.

8. Ratings:	ICR	ICR Review	Reason for Disagreement /Comments
Outcome:	Satisfactory	Moderately Satisfactory	[The ICR's current 4-point scale does not allow for a "moderately sat." rating]. This would have been Satisfactory were it not for uncertainties on the hazardous waste component - its justification, its greatly delayed implementation and its still uncertain outcome, though the strong government commitment to its completion is noted.
Institutional Dev .:	Substantial	Substantial	
Sustainability :	Likely	Likely	Key elements were project support to the National Environmental Action Plan and the introduction of performance agreements for industries.
Bank Performance :	Satisfactory	Satisfactory	Bank support to project idenitifcation and design and to overcoming implementation problems was commendable. However, the ICR provides little information on the addition of the hazardous waste component and whether it followed normal Bank standards of appraisal, peer and management review and notification to the Board. Subsequent implementation delays may indicate that it was added prematurely to make use of available funds.
Borrower Perf .:	Satisfactory	Satisfactory	Albeit only marginally so. Early delays and lack of commitment were perhaps inevitable, given the situation in the country in the late-90s, and were overcome in the latter stages.
Quality of ICR :		Unsatisfactory	

NOTES:
- When insufficient information is provided by the Bank for IEG to arrive at a clear rating, IEG will downgrade the relevant ratings as warranted beginning July 1, 2006.
- ICR rating values flagged with ' * ' don't comply with OP/BP 13.55, but are listed for completeness.

9. Lessons:
1. Even in a country with no history of environmental protection, much can be achieved in a well -designed first

project, which balances capacity building with investments in pollution reduction .
2. Picking the "low hanging fruit" in pollution reduction investments can often yield solutions that are financially profitable for the enterprise, as well as beneficial for the environment .
3. Adding major unrelated components to use up undisbursed loan balances should be done with the same rigor as the appraisal of a stand-alone project, to maximize the chances for successful implementation .
4. Voluntary environmental performance management agreements can be a powerful tool for a new environmental agency.

10. Assessment Recommended? ○ Yes ● No

11. Comments on Quality of ICR:

The ICR is succinct and covers the main descriptive elements and issues reasonably well, although it could have been enhanced with a number of tables clearly setting out comparisons of appraisal, revised and actual achievements, with respect to: project description; performance indicators; cost estimates; financing plans; economic and financial rates of return etc.

However, a major issue regarding ICR quality is that the hazardous waste component is only sketchily described and no information is given on its justification or the process by which it entered the project . The reasons why, after three years, it had only reached the bidding documents stage, are not clearly presented . Its outcome should not have been rated S, given that nothing had been constructed . Other ICR shortcomings are:

- Section 4.5 on institutional development impact is too sketchy
- Annex 2 does not contain the standard tables comparing actual and appraisal project costs and financing plans . Three different figures are given for total Bank disbursements .
- The economic analysis is in a different form from that in the SAR and should be further reviewed for possible double counting
- Annex 3 does not provide basic supporting information on assumptions and methodology
- No financial analysis is attempted
- M&E systems are not mentioned or evaluated
- There is no assessment of how safeguard issues were treated at appraisal, at the inclusion of the hazardous waste component and during implementation